

Title (en)

Material for a semiconductor device carrier substrate and method of producing the same

Title (de)

Material für Halbleiter-Trägersubstrat und seine Herstellung

Title (fr)

Matériau pour substrat supportant des semi-conducteurs et fabrication associée

Publication

EP 0813243 A2 19971217 (EN)

Application

EP 97109681 A 19970613

Priority

- JP 17573096 A 19960614
- JP 8490697 A 19970403
- JP 13616497 A 19970509

Abstract (en)

To provide a substrate material made of an aluminum/silicon carbide composite alloy which has a thermal conductivity of 100 W/mxK or higher and a thermal expansion coefficient of 20×10^{-6} / DEG C or lower and is lightweight and compositionally homogeneous. A substrate material made of an aluminum/silicon carbide composite ally which comprises Al-SiC alloy composition parts and non alloy composition part and dispersed therein from 10 to 70% by weight silicon carbide particles, and in which the fluctuations of silicon carbide concentration in the Al-SiC alloy composition parts therein are within 1% by weight. The substrate material is produced by sintering a compact of an aluminum/silicon carbide starting powder at a temperature not lower than 600 DEG C in a non-oxidizing atmosphere. <IMAGE>

IPC 1-7

H01L 23/15

IPC 8 full level

B22F 3/24 (2006.01); **C22C 1/05** (2006.01); **C22C 1/10** (2006.01); **C22C 21/00** (2006.01); **C22C 32/00** (2006.01); **C25D 17/16** (2006.01); **H01L 21/48** (2006.01); **H01L 23/14** (2006.01); **H01L 23/15** (2006.01)

CPC (source: EP US)

C22C 32/0063 (2013.01 - EP US); **H01L 21/4807** (2013.01 - EP US); **H01L 23/15** (2013.01 - EP US); **H01L 24/48** (2013.01 - EP US); **H01L 2224/16** (2013.01 - EP US); **H01L 2224/16225** (2013.01 - EP US); **H01L 2224/32188** (2013.01 - EP US); **H01L 2224/32225** (2013.01 - EP US); **H01L 2224/32245** (2013.01 - EP US); **H01L 2224/48091** (2013.01 - EP US); **H01L 2224/48247** (2013.01 - EP US); **H01L 2224/73204** (2013.01 - EP US); **H01L 2224/73253** (2013.01 - EP US); **H01L 2224/73265** (2013.01 - EP US); **H01L 2924/00014** (2013.01 - EP US); **H01L 2924/01012** (2013.01 - EP US); **H01L 2924/01019** (2013.01 - EP US); **H01L 2924/01046** (2013.01 - EP US); **H01L 2924/01078** (2013.01 - EP US); **H01L 2924/01079** (2013.01 - EP US); **H01L 2924/01322** (2013.01 - EP US); **H01L 2924/09701** (2013.01 - EP US); **H01L 2924/12042** (2013.01 - EP US); **H01L 2924/15153** (2013.01 - EP US); **H01L 2924/15165** (2013.01 - EP US); **H01L 2924/1517** (2013.01 - EP US); **H01L 2924/15311** (2013.01 - EP US); **H01L 2924/15312** (2013.01 - EP US); **H01L 2924/1532** (2013.01 - EP US); **H01L 2924/16152** (2013.01 - EP US); **H01L 2924/16195** (2013.01 - EP US); **H01L 2924/181** (2013.01 - EP US); **Y10T 428/24975** (2015.01 - EP US); **Y10T 428/25** (2015.01 - EP US); **Y10T 428/252** (2015.01 - EP US); **Y10T 428/26** (2015.01 - EP US); **Y10T 428/31678** (2015.04 - EP US)

C-Set (source: EP US)

1. **H01L 2924/16152 + H01L 2224/73253**
2. **H01L 2224/73265 + H01L 2224/32245 + H01L 2224/48247 + H01L 2924/00**
3. **H01L 2224/48091 + H01L 2924/00014**
4. **H01L 2224/73204 + H01L 2224/16225 + H01L 2224/32225 + H01L 2924/00**
5. **H01L 2924/15311 + H01L 2224/73204 + H01L 2224/16225 + H01L 2224/32225 + H01L 2924/00**
6. **H01L 2924/12042 + H01L 2924/00**
7. **H01L 2924/00014 + H01L 2224/45099**
8. **H01L 2924/00014 + H01L 2224/05599**
9. **H01L 2924/00014 + H01L 2224/85399**
10. **H01L 2924/00014 + H01L 2224/45015 + H01L 2924/207**
11. **H01L 2924/181 + H01L 2924/00**

Cited by

DE102005033691B4; CN102477570A; EP1284250A1; EP0987231A1; FR2843108A1; US6123895A; EP0938137A3; KR20110040923A; EP2305400A4; KR20160072847A; US9017824B2; US7935885B2; US7572980B2; US7196417B2; US6507105B1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

EP 0813243 A2 19971217; **EP 0813243 A3 19981202**; **EP 0813243 B1 20051026**; DE 69734419 D1 20051201; DE 69734419 T2 20060427; JP 4080030 B2 20080423; JP H10335538 A 19981218; MY 125699 A 20060830; MY 127592 A 20061229; MY 139560 A 20091030; SG 63717 A1 19990330; US 2002034651 A1 20020321; US 2005025654 A1 20050203; US 6183874 B1 20010206; US 6388273 B1 20020514; US 6534190 B1 20030318; US 6974558 B2 20051213

DOCDB simple family (application)

EP 97109681 A 19970613; DE 69734419 T 19970613; JP 13616497 A 19970509; MY PI0404901 A 19970613; MY PI0504086 A 19970613; MY PI9702649 A 19970613; SG 1997002057 A 19970613; US 13842202 A 20020506; US 69216200 A 20001020; US 87454397 A 19970613; US 92378204 A 20040824; US 92542701 A 20010810